



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/367,778	08/18/1999	PETER LIGGESMEYER	P99.0101	4756
21171	7590	10/05/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			TSAI, CAROL S W	
			ART UNIT	PAPER NUMBER
			2857	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/367,778	<b>Applicant(s)</b> LIGGESMEYER, PETER	
	<b>Examiner</b> Carol S Tsai	<b>Art Unit</b> 2857	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 5,161,115 to Teshima et al.

With respect to claims 1, 4-6, and 8-11, Teshima et al. disclose a method for computer-supported error analysis of at least one of sensors and actuators in a technical system, the error analysis being in a form of a finite state description that exhibits states of the technical system, the method using a computer, comprising the steps of: a) determining a finite state description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system (see col. 2, lines 51-64; col. 6, lines 36-41 and lines 57-59; col. 6, line 60 to col. 7, line 4; and col. 11, lines 29-40); b) determining a first set of achievable states for the technical system without errors using the finite state description; c) determining a second set of achievable states for the technical system having an error, using the finite state description d)forming a difference set from the first set and the second set; and e) determining result conditions from the difference set, the result conditions meeting prescribable conditions (see

Art Unit: 2857

Figs. 10-12; col. 2, lines 35-50; col. 5, lines 3-31; col. 6, line 60 to col. 8, line 46; and col. 9, lines 32 to col. 10, line 22).

As to claims 2 and 3, Teshima et al. also disclose method steps a) through e) being implemented for all possible errors of sensors and actuators in the technical system (see Fig. 3; col. 4, lines 3-9; col. 7, lines 42-61; and col. 8, lines 34-46).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teshima et al. in view of U. S. Patent No. 5,680,322 to Raimi et al.

As noted above, Teshima et al. disclose the claimed invention, except for the finite state description being realized by a finite automat formed as a binary decision diagram.

Raimi et al. teach the finite state description being realized by a finite automat formed as a binary decision diagram (see col. 7, lines 5-53).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Teshima et al.'s method to include the finite state description being realized by a finite automat formed as a binary decision diagram, as taught by Raimi et al., because a finite state machine having the symbolic representation of sets of states and of Boolean functions with the aid of binary decision diagram can often describe a FSM much more

Art Unit: 2857

efficiently and concisely than explicit descriptions, such as explicit state graphs or explicit state tables (see col. 7, lines 45-49).

### *Response to Arguments*

6. Applicant's arguments filed 08/ have been fully considered but they are not persuasive.

August 18, 2004.

Applicant argues that the system taught by Teshima et al. is merely described as taking errors into account, not creating separate sets of achievable states, one of which includes no errors and the other of which includes at least one error, so that a difference set can be formed, that since no such difference set is formed, there is no operation taught or suggested by Teshima et al. of "determining result conditions from the difference set". The Examiner disagrees with Applicant. The examiner interprets the claimed language differently from Applicant. As set forth above in the art rejection, Teshima et al. do disclose creating separate sets of achievable states, one of which includes no errors and the other of which includes at least one error, so that a difference set can be formed (see col. 2, lines 51-64; col. 6, lines 36-41 and lines 57-59; col. 6, line 60 to col. 7, line 4; and col. 11, lines 29-40; the present invention is to provide a system test apparatus for definitely representing whether or not both a normal process of a product and its abnormal process were satisfactorily tested according to the product's design specifications represented according to a finite state machine model).

Applicant argues that the present invention provides a benefit over the system taught by Teshima et al. in that the difference set can be used to perform an overall analysis of the system, that what is described in Teshima et al. is monitoring the operation of a test system to determine

Art Unit: 2857

whether it is performing within specifications, not performing error analysis of at least one of sensors and actuators in a technical system; therefore, it is submitted that claim 1 and claims 2-6 which depend therefrom patentably distinguish over Teshima et al. The Examiner disagrees with Applicant. As set forth above in the art rejection, Teshima et al. not only disclose monitoring the operation of a test system to determine whether it is performing within specifications, but also disclose performing error analysis of at least one of sensors and actuators in a technical system (see col. 6, lines 36-41; As described above, according to the present embodiment, by defining events and actions as time sections based on the finite state machine model, any system which has errors, such as an error of the temperature sensor and an error of operation detection, can be automatically verified). In addition, it is noted that the features upon which applicant relies (i.e., the difference set can be used to perform an overall analysis of the system) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that nothing was cited or found in Raimi et al. suggesting modification of the system taught by Teshima et al. to overcome the deficiencies discussed above with respect to claim 1. The Examiner disagrees with Applicant, as set forth above in the art rejection, Teshima et al. disclose the claimed invention, except for the finite state description being realized by a finite automat formed as a binary decision diagram. Raimi et al. teach the finite state description being realized by a finite automat formed as a binary decision diagram (see col. 7, lines 5-53), because a finite state machine having the symbolic representation of sets of states and of Boolean functions with the aid of binary decision diagram can often describe a FSM much

Art Unit: 2857

more efficiently and concisely than explicit descriptions, such as explicit state graphs or explicit state tables (see Raimi et al., col. 7, lines 45-49). Therefore, Teshima et al. in combination with Raimi et al. clearly teach claimed invention.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax number for TC 2800 is (703) 872-9306. Any

Art Unit: 2857

inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (571) 272-1585 or (571) 272-2800.

In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.



Carol S. W. Tsai  
Patent Examiner  
Art Unit 2857

09/27/04